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In the double object construction*

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1. Context: One or two pretty old ideas

The double object construction has been argued to encode a lower predicate of which the 'dative' indirect object is really the subject (Kayne 1983; Larson 1988; Basilico 1998). On this view, the idea comes readily to mind that what this predication encodes is a relation similar to 'possession' — a sentence such as

(1) I'll give Otto a gun.

after all means something like 'I'll do something to the effect that Otto has a gun'. This picture clearly has its appeal: Frequently across languages, we find that 'possession' is expressed employing *dative* (or locative) case and the verb *be* (Freeze 1992). 'High indirect objects' like 'Otto' in (1) show properties typical of subjects, ranging from extraction facts (German, cf. Hudson 1992 for English) over triggering agreement on the verb (e.g. Bantu languages) to semantic and discourse properties such as 'proto-agenthood' (Dowty 1991) and topichood.[1] In the next section, we will look at the referential properties of IOs. This will support the idea that high IOs and subjects are akin and lead to the hypothesis that is only put forward in the section thereafter.

2. Observations: Referential properties of IOs

There are interesting differences as respects the interpretation of the IO in the 'prepositional object construction' (POC, 'low IO') and the 'double object construction' (DOC, 'high IO').[2]

Robustly, a strongly quantified low IO can take non-surface scope over a weakly quantified direct object (DO), while a strongly quantified DO cannot take scope over a high IO:

(2) a. The teacher assigned an exercise to every student. [POC, 'low IO']
b. The teacher assigned a student every exercise. [DOC, 'high IO']

While in (2a) the universal quantifier can and preferably does take scope over the existential ($\approx \forall x$ student(x) $\rightarrow \exists y$ exercise(y)...), the universal quantifier has to take narrow scope with respect to the existential in (2b) ($\approx \exists x$ student(x) $\wedge \forall y$ exercise(y)...). In this connection, the following contrast is a telling one:

(3) a. Ede promised his fortune to a martian.
b. Ede promised a martian his fortune.

It seems that while (3a) does not commit us to the existence of martians, (3b) does — standardly one would want to say that while the low IO takes narrow scope with respect to the intensional verb 'promise' and is interpreted *de dicto*, the high IO takes wide scope and is interpreted *de re*. Although this effect is similar with other ditransitive verbs, judgments are not always so clear in the domain of singular indefinites.[3] But consider Bare Plurals:

(4) a. My neighbor (??once) sold schoolkids drugs.
b. My neighbor (once) sold drugs to schoolkids.

(4a) strongly suggests that my neighbor generally or habitually sold drugs to schoolkids, hence the oddity here with 'once'. (4b) is fine, being compatible with my neighbor selling drugs to schoolkids on just one occasion. This effect becomes more dramatic if a true 'once only'-predicate in combination with a bare plural IO is chosen:

(5) a. ??Anna fed crocodiles Otto.
b. Anna fed Otto to crocodiles.

The DOC in (5a) seems to require that it was Annas *custom* to feed Otto to crocodiles — something that is incompatible with Otto's being an individual that can be had for dinner only once. (5b) seems perfectly fine, the POC not giving rise to such an interpretation. Intuitively, the bare Plural in the DOC has to be interpreted generically, which should go along with some kind of generic quantification over the event in which it takes part. However, the event in (5a) is 'once only', hence the oddity. In (5b) on the other hand, there is no problem of interpreting the IO existentially. Roughly, there are some crocodiles that benefit from an event of 'Anna feeding Otto'.

Let us record that indefinite singular high IOs take wide scope and that bare plural high IOs are interpreted generically. In common terminology, this amounts to saying that they are interpreted 'strong'.[4] Low IOs on the other hand may be interpreted 'weak' also (take narrow scope).

In view of what is to come, it is worhtwhile to say a bit more on the interpretation of high IOs, something that in traditional terminology runs under the heading

of 'uniqueness'. In Russian, speakers have to make use of a particular suffix that can express 'uniqueness' in the DOC, the suffix *-to*. Using *-nibud* (which can only be interpreted with narrow scope or 'non-specifically') in the DOC gives rise to a highly marginal sentence.[5]

(6) a. … on dal kakomu**-to** studentu knigu.
he gave some -'unique' student-DAT book.
b. ?*… on dal kakomu**-nibud** studentu knigu.
he gave some -'??' student-DAT book.

Now this is a nice fact which supports the general point here — clearly, however, 'uniqueness' in any absolute sense is too strong a notion: 'Every teacher assigned a student an exercise' does not imply that the student be the same for every teacher. I would like to suggest that the 'uniqueness' we find with high IOs is 'uniqueness qua event' really, i.e., there is at most one particular IO-referent (or set of referents) available per (causing) event that is understood to occur. In terms of scope, this means just 'having wide or identical scope' w.r.t. the event variable. That this is warranted is supported by facts like the following: If we try to force a 'one event' reading, having a strongly distributing subject and a high indefinite IO gives rise to a weird interpretation:

(7) Ich beobachtete wie an dem Ort zu der Zeit…
I observed how at that place at that time
a. ?jeder Verliebte einer Geliebten Blumen schickte.
every lover a beloved flowers sent
b. jeder Verliebte Blumen zu einer Geliebten schickte.
every lover flowers to a beloved sent
c. ein Verliebter einer Geliebten Blumen schickte.
a lover a beloved flowers sent

Use of the DOC in (7a) suggests that each and every lover sent flowers to one and the same beloved. (7b) is fine, distribution over beloved persons being unproblematic. Note that (7c) shows that there is nothing else wrong with the DOC in this context.

3. Hypothesis: IOs ≈ ILP — subjects

An available distinction that could help explain the properties of high IOs is that between 'stage level' (SL) and 'individual level' (IL) predicates. As has been shown (Kratzer 1995; Chierchia 1995), subjects of (unergative) IL-predicates are interpreted strong — as we just found with high IOs.[6] The grammatical relevance of the distinction is clear, as is a good deal of the associated properties. Let us therefore put forward the following hypothesis:

The high IO is the subject of an individual level predicate

Right or wrong (a tractable question), it offers a perspective on the following issues (a desideratum):

– What are the licensing conditions for IOs?
– What is the contribution IOs make to clausal meaning?

4. Where is the state?

The least we would expect for the hypothesis that high IOs are ILP-subjects to go through is to see evidence that there is in fact a state present in the DOC. Self-evidently, IL-predications give rise to stative sentences (they have the subinterval property, go with durative adverbs etc.).

4.1 Temporal modification

Looking at patterns involving temporal modification, we see that a state is readily available in the DOC, but not in the POC:

(8) a. I'll give you the car tomorrow.
b. I'll give the car to you tomorrow.

(9) a. Otto will lend Anna his appartment while he is in Botswana.
b. ?Otto will lend his appartment to Anna while he is in Botswana.
(cf. Mc Cawley 1974)

(10) a. The students were promising Lempel the papers (until) next week.
b. ??The students were promising the papers to Lempel (until) next week.

In (8a), 'tomorrow' is preferably understood as specifying the extension of 'you having the car': It functions as a durative adverbial that measures out a *state*. In (8b), 'tomorrow' rather locates the occurrence of an *event* of giving, i.e., it functions as a frame adverbial here. The same applies to the next example: (9a) means that 'Anna will have the appartment while Otto is in Botswana'. (9b) is somewhat strange since we do not expect Otto to engage in lending his appartment when he is in Botswana already. While (10a) purports to saying that 'Lempel will have the papers by next week', (10b) forces on us an interpretation that is somewhat surreal: For it to come out true, it seems the students would have to have begun promising in the past and keep promising until next week.[7]

The patterns we encounter not only lend support to the hypothesis that there is in fact a state present in the DOC, they also provide a piece of evidence against a 'Small Clause' analysis of DOCs. At least with paradigm examples of what are believed to be small clauses, we find that the SC-predication cannot be independently modified temporally:[8]

(11) a. I found Peter sick yesterday. ≠ I found that [Peter was sick yesterday.]
b. I considered Peter the gardener yesterday. ≠ I considered that [Peter was the gardener yesterday.]

4.2 Ellipsis

Now one might object that temporal modification cannot in principle supply sufficient evidence for claims about what is syntactically encoded or not, being itself maybe not a core syntactic phenomenon. Indeed, a look at ellipsis data initially seems to refute the idea that a state is there in syntax also. Consider the following example:

(12) The boss is offering Anna more money than Otto.

This cannot mean that 'the boss is offering Anna [more money than Otto has]', which we would expect: On the assumption that comparative ellipsis is licensed iff what is elided is 'LF identical' with an antecedent, why should a structurally present state not feed comparative ellipsis?[9]

On closer inspection, it turns out that this negative conclusion is too hasty. In fact, we can compare a state in the DOC, as the following examples show:

(13) Om mijn zoontje gerust te stellen ...
a. zal ik hem meer vla geven.
b. zal ik meer vla aan hem geven.

(14) a. Der Boss übergibt Anna mehr Verantwortung.
the boss is-giving Anna more responsibility
b. Der Boss übergibt mehr Verantwortung an Anna.
the boss is-giving more responsibility to Anna

(13a) has a reading that amounts to the following: 'I'll increase my son's vla-stock' ('vla' is a prominent Dutch dessert). Importantly, it is not events that are compared here (like in 13b), but states, expressing amounts of vla at the son's disposal. The same applies to (14a) and (14b): While (14a) has a reading that just says that Anna's amount of responsibility will increase, (14b) does not seem to have that reading — rather, the comparison here is with alternative giving-events. Again, there is a '*state* comparison' — reading in the DOC in (14a), but only an '*event* comparison' — reading in the POC in (14b).[10]

If we believe in the structural nature of comparative ellipsis, then this is evidence that there is in fact a state encoded in the syntactic structure of the DOC, but not the POC. While I cannot supply a real analysis of the ellipsis data at this point, the direction such an analysis should take is clear: We know that the high IO takes wide scope. It seems plausible for independent reasons that structurally, the high IO is merged above the subject actually (cf. below). If we make the natural assumption that the licensing of the subject (here: agent) argument is closely

connected to having a (causing) event, then it is but a small step to argue that if we abstract over the high IO to construct the appropriate LF-predicate for comparative ellipsis, we necessarily leave the event argument behind in that predicate. Now if there is something to the 'event-unique' interpretation of high IOs, then having different IO-referents will imply quantification over different events also.

Note that the mere difference between (12) and (13a), (14a) respectively is that in the latter DOCs where we get the state comparison reading, the IO is 'kept constant'. For some reason, it is possible under these circumstances to construct a predicate just consisting of the state. One could argue that abstraction is over the IO and the event argument, leaving two LF-identical states, or that identical material 'above' what is actually compared does not matter (i.e., can be ignored. Note that the 'event comparison' reading is also available in the DOC). With these indications, I'll leave this interesting issue to another occasion.

5. Analysis

Having seen some evidence in favor of the idea that there is in fact a state encoded in the DOC also structurally, let's now turn to analysis. On the 'semantic' side, a proposal that is well in line with what has been said so far is that of Szabolcsi 1994 (and earlier). Szabolcsi argues that at least in Hungarian, sentences involving *have*-predication are in fact presentational sentences after possessor raising. The reason why the possessor has to raise is precisely that it is quantified and therefore has to get out of the scope of the presentational sentence. Here is an example from Szabolcsi:

(15) Mari-nak van -nak kalap-ja -i. [Hungarian]
Mari-DAT be-PAST-3PL hat -POSS3SG-PL
'Mari had hats.'

On the syntactic side, the more elaborate analyses of dative alternation (Larson 1988; Den Dikken 1995: 109ff) seem readily available to implement this. The core idea that these analyses share is that the DOC is derived from the POC in roughly the following manner: the preposition *to* incorporates into empty *be*, giving rise to (empty) *have*. The DP complement of the preposition has to raise then to a position where it can be case-licensed.

This line of thinking has its problems, however. It is a simple, hitherto still ignored fact that in many Germanic languages (including dialects of English), the following construction is perfectly natural:

(16) Ich schickte Meier-DAT die Akten (runter) ins Büro.
I sent Meier the files down into-the office.

As it turns out, both a 'high' and a 'low' IO may peacefully coexist in one and the same structure — quite a mystery if the high IO is derived from the low IO. Data like in (16) indeed put quite some burden on a transformation/incorporation analysis — to see this, suppose that (most in line with Szabolcsi's proposal), (16) is actually derived from

(17) I sent the files [$_{PP}$ to [$_{DP}$ [$_{DP/D}$ Meyer's] office.]]
I sent the files [$_{PP}$ to the office [$_{PP}$ of Meyer.]]

Roughly, the high dative starts out as a possessor within the lower PP and is raised from there. While this comes close to what we understand (16) to mean, syntactically it does not seem feasible: On the view that the high IO is licensed through incorporation, serious complications relating especially to the HMC arise.[11]

Given this and what has been discussed earlier on, a view like the following suggests itself: The high IO is not an argument that is projected by the base verb, nor is it licensed in any direct way by other (possibly empty) lexical material. Rather, DOCs comprise an extra predication 'qua construction' (where as far as I can see, 'construction' can be taken to correspond to the functional layer above V in minimalist terms).[12]

Before we put forward a proposal concerning representation, however, let's recapitulate and get back for a moment to the hypothesis that the high IO is the subject of an ILP. For this to be viable, something that counts as an ILP has to be around to be predicated of the high IO (and the high IO should also c-command this ILP under standard assumptions).

Chierchia 1995 and McNally 1998 argue that the crucial identification criterion for individual-level predication is its 'location independence'. If a subject is ascribed a property by an ILP, it will ceteris paribus keep that property, no matter whether the subject's referent changes (spatiotemporal) location.[13] Intuitively, this takes care immediately of one paradigm case of DOCs, namely predicates encoding transfer:

(18) Otto {gave, sold, borrowed, handed} Anna the keys in the bar yesterday.

Unless we are explicitly informed otherwise, we understand that the keys are still with Anna — quite independent of the fact that it is not yesterday anymore and independent of whether she is still in that bar or not. The same is true more generally of any event happening in somebody's interest, that is, in constructions expressing benefactives in the widest sense. What seems crucial is that the event be 'perfected': For an event to have happened, it has to have come to its end to begin with. Consider the following examples, the second of which crucially is ok in English, even though English is held not to feature 'free datives':[14]

(19) a. Otto sang (a song).
b. Otto sang me a song.
c. ??Otto sang me songs.
d. *Otto sang me.

Roughly, if something happens in somebody's interest (or the like), it will — in fact forever — have happened in the interest (or the like) of that somebody, no matter where he/she goes. Somewhat poetically: The singing of that song in (19b) is 'with me', no matter when, where or what. (19c) and (19d) are no good since the singing event there is not 'delimited' and therefore cannot be 'perfected'.[15]

For representation, I adopt a proposal from Kratzer 1994. I submit that the extra predication we find in DOCs is of a particular basic nature, namely that of a presentational sentence. For these, Kratzer argues that they comprise a raising copula and a clitic corresponding to German 'da', where 'da' denotes a spatiotemporal location. Semantically, in a presentational sentence a situation is predicated of that spatiotemporal location. Kratzer gives the following translation for the raising copula (applied to the clitic already):

$be_{\text{raising clitic}} = \lambda s$ location (there, s)

We do in fact find the spatiotemporal pronoun 'da' in DOCs in German also. Crucially, the high IO has to appear to its left:

(20) a. Ich schickte Anna da ein Paket hin.
b. Ich schickte Anna ein Paket da hin.
c. *Ich schickte da Anna ein Paket hin.
'I sent Anna a parcel there to.'

Simplifying somewhat, 'da' marks the shed between restriction (≈ subject) and scope (≈ predicate) of a presentational sentence. I suggest that it does just the same in DOCs, only nothing is forced to appear to its left (like an expletive in a matrix sentence), since we're dealing with an embedded predication (so SVO is not forced). However, the high IO — if there is one — has to appear to the left of 'da' since it is strong and therefore must not appear in the scope of the presentational predication. Basically, this is just Szabolcsi's story from above.[16] Taking Kratzer's perspective, what the high IO really does is restrict the spatiotemporal location that is the subject of the presentational sentence, where the predicate is a situation.

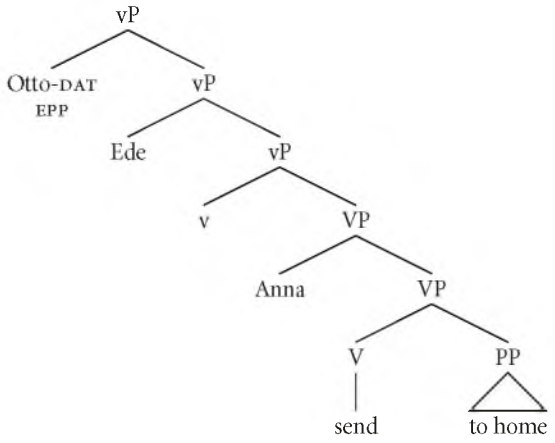
At this stage, I will put all the representational burden on small v and leave the question whether it should be 'split' into e.g. a seperate Aspect Phrase and/or Tense Phrase to the future. For space reasons, I only put down here the step where small v combines with the VP for a simplified example derivation, modelled on Kratzer's 1994 proposals:

1. VP = send Anna (to) home = λe [sending(e) & theme(anna, e) & to home(e) & f-target(e) = at home(anna)]
2. v = $\lambda P\ \lambda y\ \underline{\lambda z}\ \lambda s\ \exists e$ [P(e) & s = f-target(e) & agent(y, e) & $\underline{\text{location(z, s)}}$]
3. vP = $\lambda y\ \lambda z\ \lambda s\ \exists e$ [sending(e) & s = f-target(e) = at home(anna) & theme(anna, e) & to home(e) & agent(y, e) & location(z, s)] (ede) (otto)
   = $\lambda s\ \exists e$ [sending(e) & s = f-target(e) = at home(anna) & to home(e) & theme(anna, e) & agent(ede, e) & location(otto, s)]

Some comments are in order: Kratzer's raising be is part (underlined) of the semantics of v. Moreover, v contains Kratzer's 'Perfect' operator which existentially binds the event variable and identifies with its target state a state variable that it introduces.[17] Apart from an agent argument, v also introduces a spatiotemporal location predicated that target state. This 'Location' argument is saturated (more properly: restricted) by the high IO. The VP and v can combine then via functional composition to yield vP.

In the format of Chomsky (1998), the relevant part of the syntactic tree looks as follows:

(21)



All the high IO does formally is check the EPP feature of v — since this is the cheapest operation available at that stage in the derivation, the high IO will be merged directly from the numeration into the outer specifier of v, just like an expletive in matrix presentational sentences. The subject on this representation is in fact lower than the high IO. Case assignment is not a problem: Since the high IO's case is not structural (cf. Steinbach and Vogel 1998), it will not count as a closer GOAL for the PROBE (T) checking structural nominative case (cf. Brandt 1999), arguing that the featural content of high IOs is just that of expletives).[18]

Notes

* I would like to thank Olga Borik, Oystein Nilsen and an anonymous reviewer for valuable comments on an earlier version of this paper. Errors are of course mine.

1. Basilico (1998) argues that high IOs are subjects of categorical judgments (where a categorical judgment roughly corresponds to the ascription of a property to an individual). On grounds of evidence from anaphora, (focussing) adverbs, accenting etc., Brandt (1999) argues that high IOs are generally topic expressions.

2. The terminology 'low IO' and 'high IO' respectively will become clear below.

3. The distinction to be made here is that between 'specificity' (taking wide scope) and 'referentiality' (presupposing existence). One would probably want to argue that with those verbs where the high IO is not clearly interpreted referentially (as with e.g. 'send' or 'wire'), a relation of *intentionality* or the like between the *agent* and the *recipient* holds (cf. Dowty 1979: 192), giving rise to opacity on the latter. With verbs like 'promise', 'offer', 'give', 'hand' or 'throw', this is quite clearly not the case. Cf. e.g.

(i) a. Desperately, Myers throws *a long pass to someone in defense* ... but everybody is attacking actually.
b. Desperately, Myers throws *someone in defense a long pass* ... ??but everybody is attacking actually.

As (b) shows, with 'throw' it is odd to deny the existence of an individual that has been made reference to by a high IO — this is straightforwardly explained if we say that what we are producing in (b) is a violation of an existence presupposition.

4. 'Strength' as understood here comes closest to the notion of 'specificity' as used in Discourse Representation Theory: Being interpreted strong on this view amounts to being quantified (bound by an antecedent) outside the immediate clause in which the expression in question appears (or seems to appear).

5. In what corrsponds to the POC in Russian with respect to the pertinent c-command relations (cf. Larson 1988: 336ff), use of either suffix is fine: *on dal knigu kakomu {-to, -nibud} studentu.*

6. Note that being the subject of an ILP and being the subject of a predicate encoding 'possession' is not equated here. For one thing, clearly ILPs do not have to express 'possession' or the like in a narrow sense. For another, it is not clear that 'possession' is always 'individual level', as the 'existential sentence' test shows. 'Inalienable Possession' is clearly out in this environment, while this is less so for 'alienable possession' (due here presumably to the locative PP):

(i) a. *Es hat ein Mann zwei Beine.
there has a man two legs
b. ?Es hat ein Mann einen Hut auf dem Kopf.
there has a man a hat on his head.

7. That there are in fact two 'anchors' for temporal modifiers in the DOC but not in the POC shows nicely in a 'Timezone argument' suggested to me by David Pesetsky. Imagine that A is in N. Y. where it is Wednesday, and B is in Moscow where it is Thursday already. Now A faxes B a letter. B says later:

(i) a. A faxed me a letter on Wednesday.
b. A faxed me a letter on Thursday.
c. A faxed a letter to me on Wednesday.
but not: ??A faxed a letter to me on Thursday.

It seems that B can make reference to the 'sending' as well as to the 'receiving' end in the DOC, while there is no such 'receiving' end accessible in the POC.

8. It should be noted that there is anything but agreement what a Small Clause should really be. Historically, however, a core idea has been that Small Clauses are bare subject–predicate constructions lacking Tense. An anonymous reviewer points out that with adverbs like 'still' and 'again', it does indeed look as if what is generally regarded a Small Clause had a temporal dimension to it. I merely note that these adverbs are strongly presuppositional, suggesting that the effect belongs to a different domain.

9. An example where something 'smaller' than lexical V is subject to comparative ellipsis is the following:

(i) I want more toys than Otto.

Quite clearly, this can mean that 'I want more toys than Otto has' (the *narrow scope* reading as opposed to the *wide scope* reading 'I want more toys than Otto wants')

10. To get the intuition, it may be useful to consider the following little context:

(i) Otto was holding three balls (which he picked up himself). Even so,
  a. Anna threw him more.
  b. ??Anna threw more to him.

The first sentence tells us that Otto is in a state of holding three balls. We may go on then with (a): Basically, we pick up the state and compare it with the result state of Anna's throwing, which will be that Otto has more than three balls. (b) is not a good continuation — we look for a ball-throwing event to compare Anna's throwing to, but such an event is not contextually given. In other words, If we use a comparative DOC, an antecedent *state* may do. If we use a comparative POC, we need an antecedent *event*.

11. The widely accepted HMC (Head Movement Constraint) of Travis (1984) says that head movement is strictly local, i.e., it always has to target the next c-commanding head position up. The incorporating head licensing the high IO would however have to skip the preposition as well as the particle, that is, violate the HMC more than once. More independently of theory, one may often wonder what it is that incorporates on the incorporation line of thinking: In several languages featuring 'dative alternation' (e.g. Russian, Bantu, Finnish), the phenomenon does not involve prepositions at all. Finally, we would expect high IOs to be able to 'reconstruct' if they were generated in the vicinity of low IOs and receive a weak interpretation, which is just what I have argued against above.

12. That DOCs carry 'special meaning' one would feel hard pressed to attribute to the verb is particularly evident in constructions like the following, which are syntactically just like DOCs in all relevant respects, but do not comprise 'ditransitive' verbs:

(i) a. Otto haut Ede einen Nagel *(in die Wand).
  Otto hits Ede a nail into the wall
  b. Otto sang Anna ein Lied (ins Ohr).
  Otto sang Anna a song into-the ear

13. See again note 6 on 'possession'.

14. I would argue for English that the case-licensing of high IOs here is a matter of PF, along the lines of Neeleman and Reinhart (1998).

15. Note that this condition of 'perfectivity' much more generally holds for datives. We find it with (unaccusative) 'experiencers' for example (where I make the standard assumption that the PP 'die Treppe herunter' delimits the falling-event):

(i) Die Vase fiel mir-DAT *(die Treppe herunter).
  the vase fell me the stairs down

16. It seems to me though that the DO may be definite and just as well appear to the right of 'da' (but one may want to look at corpora). A way out, I think, would be to argue that the DO, as well as e.g. the PIO, are really absorbed into the predicate which corresponds to a complex event description (cf. McNally 1998: 302). The high IO is not part of the predicate but really its subject.

Cf. Marantz (1993) for arguments that the high IO is 'outside' an event it stands in a predicational relationship to.

17. The function 'f-target' maps an event onto its expected/intended result state. As noted above, this state may just consist of the 'causing event' itself having occurred. It could prove necessary to let count something else as the 'perfected' event, for example a subevent or a consequent event of the 'causing' event. I have to leave discussion of the complications arising to another occasion (but cf. Kratzer 1994: Ch. 2, pp. 32ff for directions).

18. Witness also presentational experiencer sentences in German, where the order IO > SU is the unmarked one, cf. Steinbach and Vogel (1998). As far as standard tests for relative base positions in terms of c-command are concerned, these are not clear with respect to the order of subject/external argument and high IO in either direction. That the high IO may in fact be base generated above the subject is suggested by data like the following, which I shortly comment on:

(i) Die Maenner-NOM$_i$ haben den Frauen-DAT alle-NOM$_i$ einen Drink angeboten.
the men have the women all a drink offered

On the assumption that quantifier stranding is extraction out of the quantified phrase, the subject here seems to have been base generated lower then the IO.

(ii) ...weil dem Martin-DAT$_i$ seine Eltern-NOM$_i$ ein Auto versprochen haben.
because the Martin his parents a car promised have

On the assumption that we are dealing with A-binding, the IO c-commands the SU from an argument position here.

(iii) ...weil seine Eltern-NOM$_i$ jedem Kind-DAT$_i$ Liebe schulden.
because its parents every child love owe

Like (ii), only binding from the IO into the SU is possible even though the surface c-command relations are SU > IO — suggesting that the IO has to c-command SU at some relevant level (where both IO and SU are in argument positions).

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